REMARKS

Claims 1-78 were pending and were rejected. Claims 1,2, 5-7, 11-22, 26, 29, 30, 32, 33, 37, 38, 41-43, 47-58, 62, 65, 66, 68, and 69 are amended in this reply. Claims 36 and 72 have been cancelled without prejudice. No new matter has been added. The applicant respectfully requests reconsideration of the pending rejections in light of the above amendments and the following remarks.

1. Interview Summary

The applicant thanks the Examiner for the interview of October 27, 2003, which was attended by Examiner Marschel, Tim Porter, and Paul Stone, a representative of the applicant's assignee. During the interview, the applicant's representatives discussed the differences between claim 1 and the Flavin and Schultz references. In the context of claim 1, the discussion focused on the claim's recitation of user input defining a mapping scheme, including input specifying minimum and maximum amounts and a gradient between those amounts, and on the visual display of a graphical representation of a library of materials. The distinction between "resource-oriented" and "result-oriented" library design, as set out in the prior reply in the parent application, was also discussed.

2. Rejections under Section 112

Claims 1-78 were rejected under the second paragraph of 35 U.S.C. § 112 as allegedly being indefinite in their recitation that a "source" is defined without further use of that term in the claims. The claims have been amended to clarify that the components assigned to particular cells in the one or more destination arrangements by virtue of the recited mappings are components represented by the defined sources, and further that the arrangements of cells in question are arrangements represented by the one or more defined destinations. However, it should be noted that the claimed methods and computer program products focus on the conceptual design of combinatorial materials libraries. Accordingly, the claims are directed to the use of electronic data to design such libraries – that is, the association of data representing

source components with data representing destination regions – and not to the actual dispensing or depositing of chemicals at substrate locations. The applicant believes that these amendments address the Examiner's concerns and requests that the rejections under section 112 be withdrawn.

3. Rejections under Section 103

Claims 1-78 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,044,212 ("Flavin") in view of U.S. Patent No. 6,004,617 ("Schultz"). The applicant respectfully disagrees.

The applicant first notes that the Office Action appears to focus exclusively on claims that recite the use of gradients to design materials libraries, while many of the pending claims are directed to different (albeit sometimes complementary) library design techniques, including the use of sets of equations (*see, e.g.,* claims 19-29 & 55-65) and process parameters (claims 30-35 & 66-71), and therefore include limitations different than, or in addition to, the gradient limitations on which the current rejections appear to be based. The applicant respectfully requests that the rejections under section 103 be withdrawn as to these claims, or at least that the basis for the rejections be explained.

Turning to the gradient claims, claim 1 recites a computer-implemented method for generating a library design for a combinatorial library of materials. According to the claimed method, one or more sources and one or more destinations are defined, each source being electronic data representing a component to be used in preparing the combinatorial library and each destination being electronic data representing an arrangement of cells. The method receives user input defining a first mapping defining a gradient distribution pattern for assigning a component represented by one of the defined sources to a plurality of cells in the one or more arrangements represented by the one or more defined destinations. A representation of the library design is generated that includes electronic data representing the sources, the destinations and the first mapping. The claim has been amended to recite that the input defining the distribution pattern specifies a set of gradient parameters that define a minimum and a maximum

amount of the component to be assigned to any of the plurality of cells of the arrangements and a gradient to be applied between the minimum and maximum amounts of the component across the plurality of cells. Support for the amendment can be found, for example, at page 3, lines 17-19 and 28-30 (explaining that properties associated with the mapping can include a set of gradient parameters defining the gradient) and page 17, line 27-page 18, line 11 (describing user definition of parameters including minimum amount, maximum amount and step size for a linear gradient between the minimum and maximum values).

Flavin discloses an automated process optimization system for chemical process development, in which initial reactions are run, products of these reactions are automatically analyzed, and subsequent sets of experiments are iteratively and automatically generated and performed until optimum conditions are determined. (*See, e.g.,* Flavin, col. 4, line 30-col. 5, line 18). Flavin discloses that before dispensing reagents, a software program determines initial values of the type and concentration of reagents for each reagent well in a reaction block. (*Id.,* col. 5, lines 26-28). According to Flavin, the reagent types and concentration values are determined from a parameter look-up table, based on operator input or the application of a computer-implemented optimization scheme. (*Id.,* col. 5, lines 46-51).

As the Examiner has recognized in the parent application, Flavin does not disclose or suggest defining a gradient mapping for its reagents, much less defining such a mapping based on user input specifying gradient parameters that define a gradient as recited in the present claims. Schultz does not make up for these deficiencies. Although Schultz discloses that a combinatorial library can include gradients of materials on a library substrate, it is not concerned with, and says nothing about, how to define such gradients in a computer-implemented graphical library design tool. In particular, Schultz does not disclose receiving a user input that specifies gradient parameters that define minimum and maximum amounts and a gradient to be applied between those amounts, or generating a representation of a library of materials that includes electronic data representing sources, destinations and mappings, as the claims also require. Schultz does include a patent drawing illustrating a table of compositions and stoichiometries of a library of cobalt oxide thin film materials prepared according to one example described in that

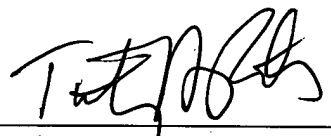
reference. But even assuming there were any suggestion in Flavin or Schultz that such a table could be used as an input to Flavin's automated reaction optimization process, which there is not, there is nothing in Flavin or Schultz that discloses or suggests the use of a user-specified parameterized gradient definition to define a mapping. Because the cited references neither disclose nor suggest at least this limitation of claim 1, the applicant submits that no *prima facie* showing of obviousness has been established and that claim 1, and dependent claims 2-18 and 73-75, which are directly or indirectly based on claim 1, should therefore be allowed. Claims 37-54 and 76-78 are computer program product claims that include limitations analogous to those of claim 1, and are therefore allowable for at least the same reason.

4. Conclusion

The applicant submits that all claims are in condition for allowance, and asks that all claims be allowed. Enclosed is a $420 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 12/1/03



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